

CLAIMS

1. Transparent substrate (6), especially made of glass, comprising, on at least one of its faces, an antireflection coating, especially having an antireflection effect at oblique incidence, made of a stack (A) of thin layers of dielectric material having alternately high and low refractive indices, **characterized in that** the stack comprises, in succession:
 - a high-index first layer (1), having a refractive index n_1 of between 1.8 and 2.2 and a geometrical thickness e_1 of between 5 and 50 nm;
 - a low-index second layer (2), having a refractive index n_2 of between 1.35 and 1.65 and a geometrical thickness e_2 of between 5 and 50 nm;
 - a high-index third layer (3), having a refractive index n_3 of between 1.8 and 2.2 and a geometrical thickness e_3 of between 70 and 120 nm;
 - a low-index fourth layer (4), having a refractive index n_4 of between 1.35 and 1.65 and a geometrical thickness e_4 of at least 80 nm.
2. Substrate (6) according to Claim 1, **characterized in that** n_1 and/or n_3 are between 1.85 and 2.15, especially between 1.90 and 2.10.
3. Substrate (6) according to either of the preceding claims, **characterized in that** n_2 and/or n_4 are between 1.35 and 1.55.
4. Substrate (6) according to one of the preceding claims, **characterized in that** e_1 is between 5 and 50 nm, especially between 10 and 30 nm or between 15 and 25 nm.
5. Substrate (6) according to one of the preceding claims, **characterized in that** e_2 is between 5 and 50 nm, especially between 10 and 35 nm and preferably less than or equal to 30 nm.
6. Substrate (6) according to one of the preceding claims, **characterized in that** e_3 is less than or equal to 120 nm and especially at least 75 Nm.

7. Substrate (6) according to one of the preceding claims, **characterized in that** e_4 is greater than or equal to 80 nm and especially less than or equal to 120 nm.

5 8. Substrate (6) according to one of the preceding claims, **characterized in that** the high-index first layer (1) and the low-index second layer (2) are replaced with a single layer (5) having an intermediate index e_5 of between 1.65 and 1.80 and preferably having
10 an optical thickness e_{opt5} of between 50 and 140 nm, preferably between 85 and 120 nm.

9. Substrate (6) according to Claim 8, **characterized in that** the intermediate-index layer (5) is based on a mixture, on the one hand, of silicon
15 oxide and, on the other hand, at least one metal oxide chosen from tin oxide, zinc oxide and titanium oxide, or is based on a silicon oxynitride or oxycarbide and/or on aluminium oxynitride.

10: Substrate (6) according to one of the preceding
20 claims, **characterized in that** the high-index first layer (1) and/or the high-index third layer (3) are based on one or more metal oxides chosen from zinc oxide, tin oxide and zirconium oxide or based on one or more nitrides chosen from silicon nitride and aluminium
25 nitride.

11. Substrate (6) according to one of the preceding claims, **characterized in that** the high-index first layer (1) and/or the high-index third layer (3) consist of a superposition of several high-index layers, especially a superposition of two layers such as
30 $\text{SnO}_2/\text{Si}_3\text{N}_4$ or $\text{Si}_3\text{N}_4/\text{SnO}_2$.

12. Substrate (6) according to one of the preceding claims, **characterized in that** the low-index second layer (2) and/or the low-index fourth layer (4) are
35 based on silicon oxide, silicon oxynitride and/or oxycarbide or on a mixed silicon aluminium oxide.

13. Substrate (6) according to one of the preceding claims, **characterized in that** the said substrate is made of clear or bulk-tinted glass.

14. Substrate according to one of the preceding claims, **characterized in that** its light reflection on the side where the stack (A) of thin layers is provided is reduced by a minimum value of 3 or 4% at an angle of incidence of between 50° and 70°.

15. Substrate according to one of the preceding claims, **characterized in that** the colorimetric response of its light reflection on the side where the stack (A) of thin layers is provided is such that the corresponding a* and b* values in the (L*, a*, b*) colorimetry system are negative at an angle of incidence of between 50° and 70°.

16. Substrate according to one of the preceding claims, **characterized in that** the antireflection stack (A) uses, at least for its high-index third layer, silicon nitride or aluminium nitride so that it is able to undergo a heat treatment of the bending, toughening or annealing type.

17. Glazing according to one of the preceding claims, **characterized in that** it is composed of the single substrate (6) provided, on one of its faces, with the multilayer antireflection stack (A) and, on its other face, either with no antireflection stack or also with a multilayer antireflection stack (A), or with another type (B) of antireflection coating, or with a coating having another functionality of the solar-protection, low-emissivity, antifouling, antifogging, anti-rain or heating type.

18. Glazing according to one of Claims 1 to 16, **characterized in that** it has a laminated structure in which two glass substrates (6, 6') are joined together using a sheet (7) of thermoplastic, the substrate (6) being provided, on the opposite side to the join, with the antireflection stack (A) and the substrate (6') being provided, on the opposite side to the join, either with no antireflection coating, or also with an antireflection stack (A), or with another type (B) of antireflection coating, or with a coating having another functionality of the solar-protection,

